OIPE
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PATENT & TRADEMARK OFFICE



FIG. 1

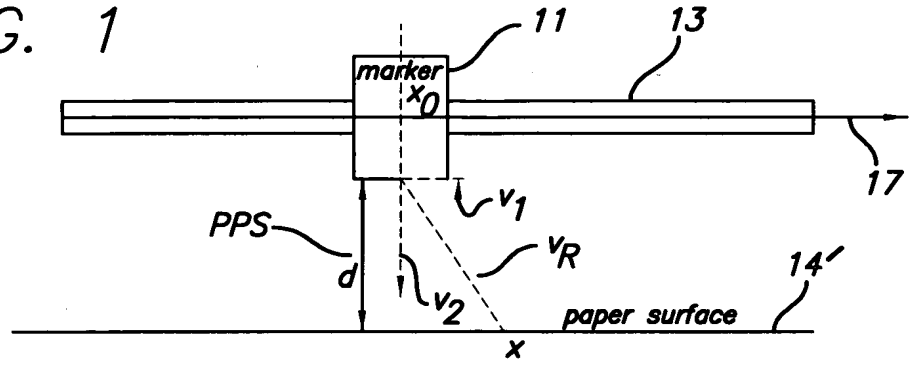
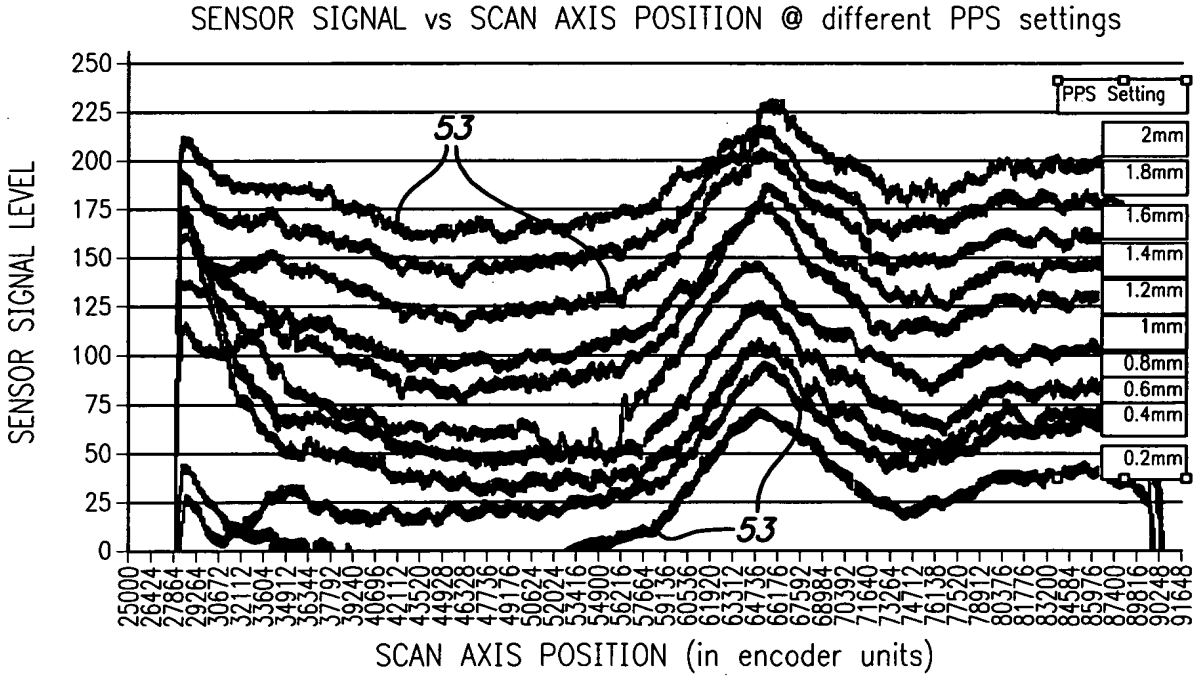



FIG. 2



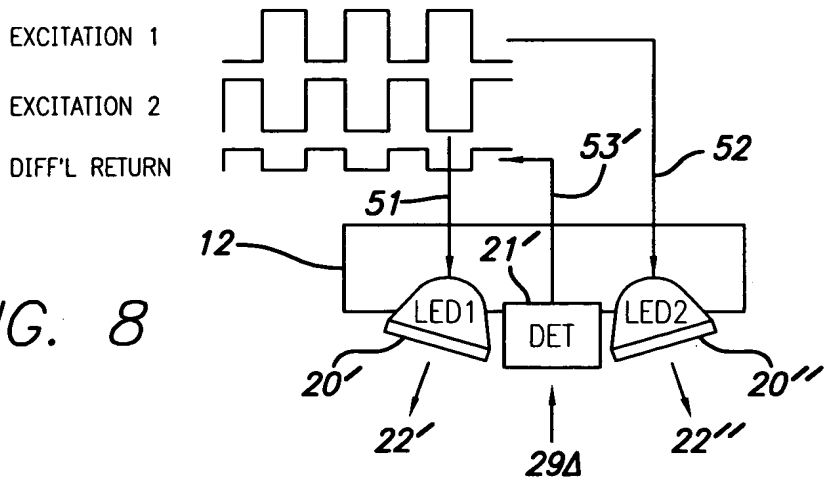




FIG. 8

FIG. 3

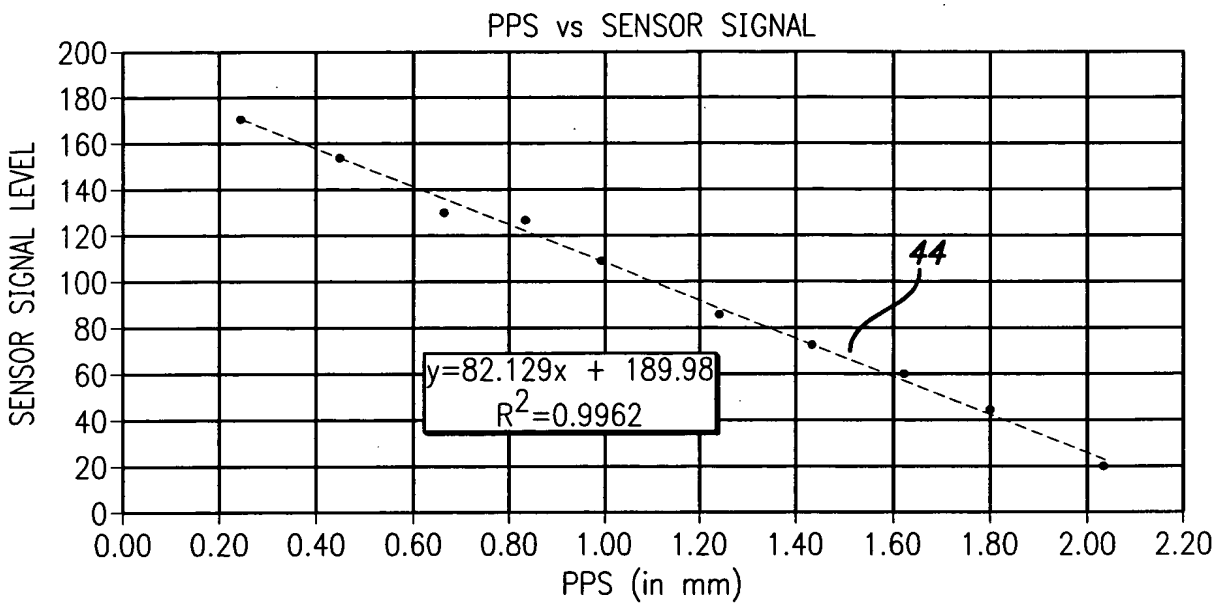

PPS vs SENSOR SIGNAL
SENSOR SIGNAL LEVEL
200
180
160
140
120
100
80
60
40
20
0
0.00
0.20
0.40
0.60
0.80
1.00
1.20
1.40
1.60
1.80
2.00
2.20
PPS (in mm)
y=82.129x + 189.98
R2=0.9962
44

FIG. 7

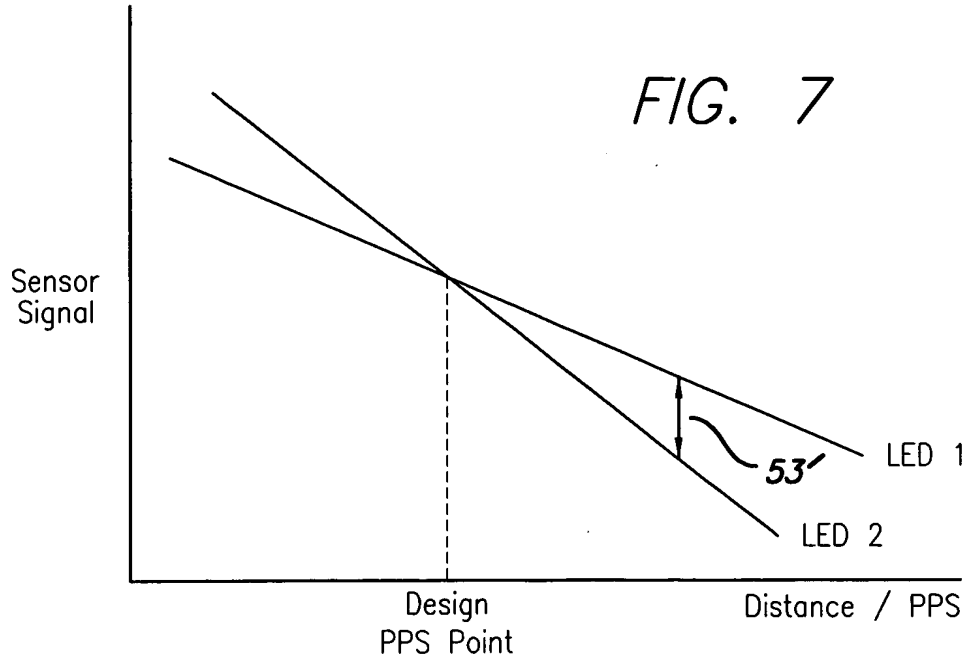

Sensor Signal
LED 1
LED 2
53'
Design PPS Point
Distance / PPS

FIG. 4

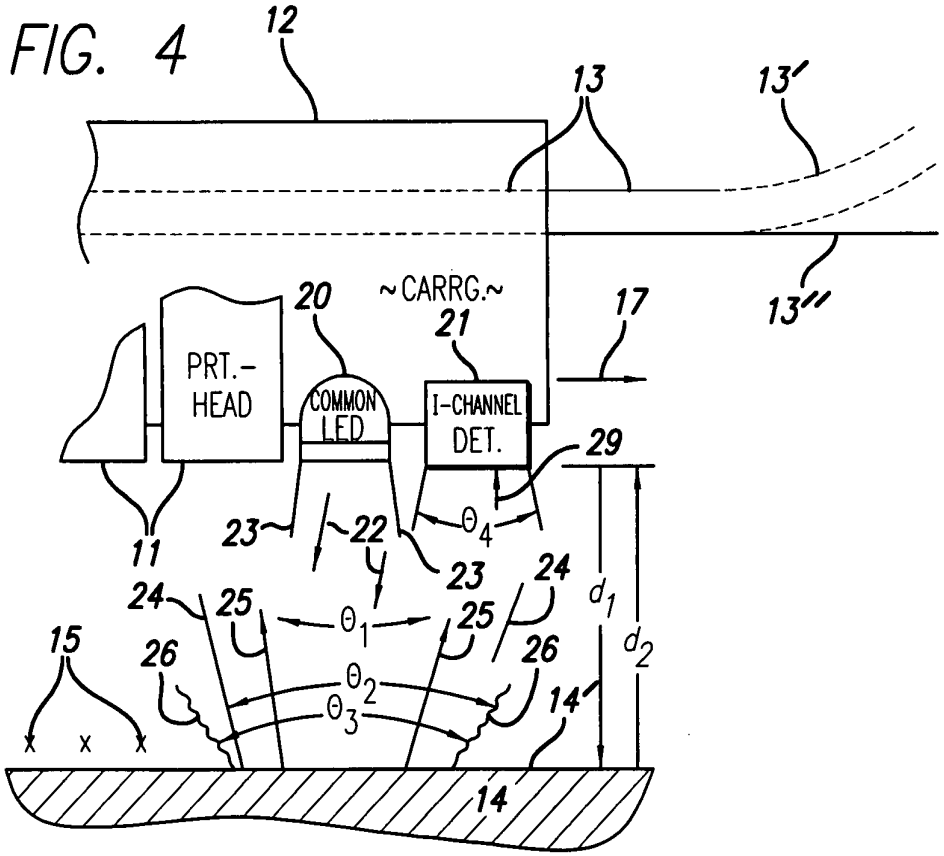

12
13
13'
13''
~CARRG.~
20
21
17
PRT.-
HEAD
COMMON
LED
I-CHANNEL
DET.
29
11
23
22
23
24
24
25
25
26
26
15
x
x
x
$\Theta_1$
$\Theta_2$
$\Theta_3$
$\Theta_4$
$d_1$
$d_2$
14'
14

FIG. 5

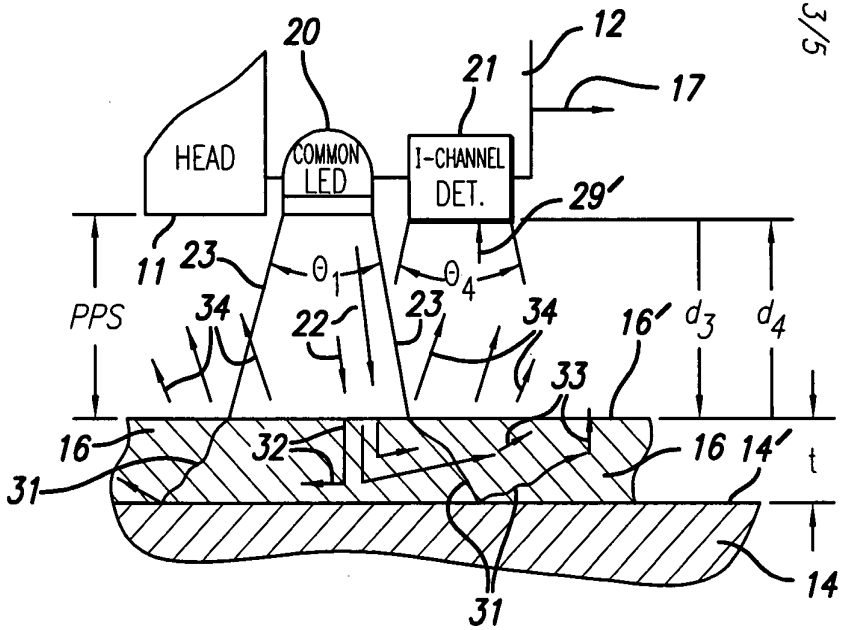

20
12
21
17
HEAD
COMMON
LED
I-CHANNEL
DET.
29'
11
23
$\Theta_1$
$\Theta_4$
PPS
34
22
23
34
16'
$d_3$
$d_4$
33
16
32
16
14'
t
31
31
14

FIG. 6

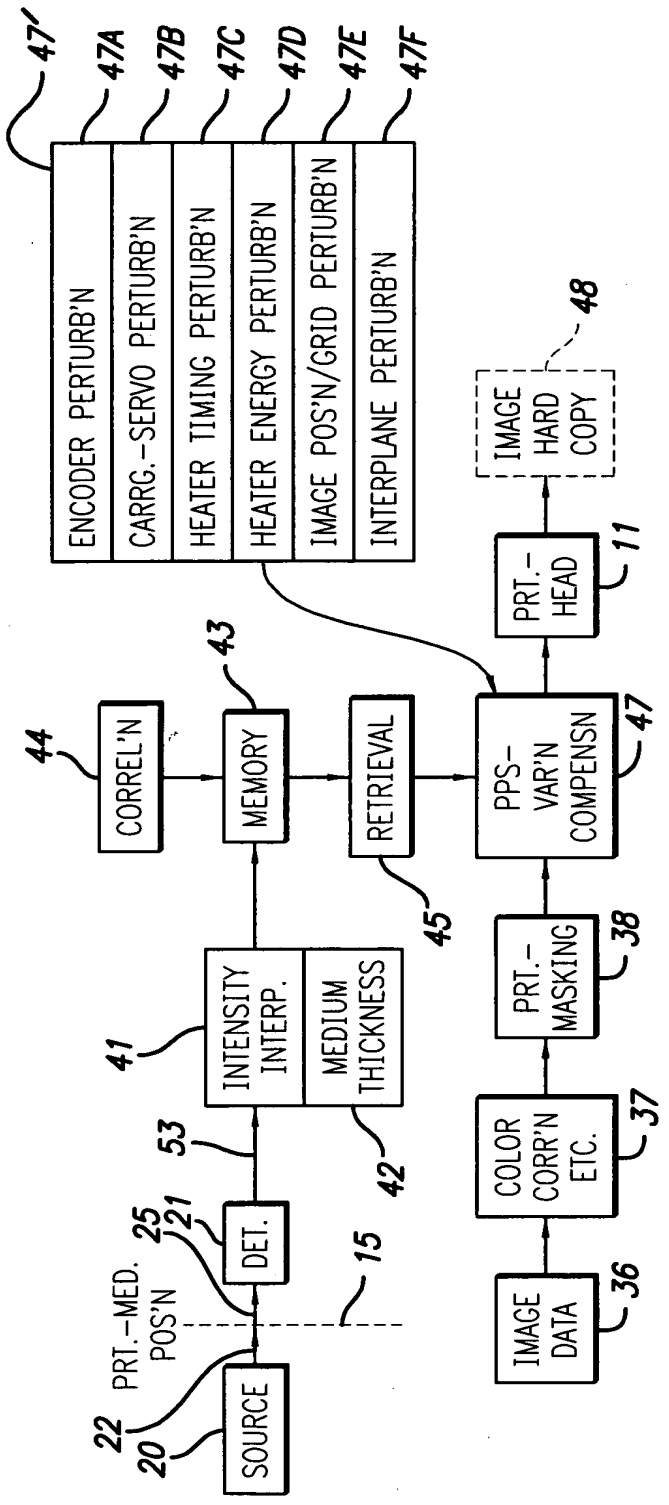

47'
47A
47B
47C
47D
47E
47F
ENCODER PERTURB'N
CARRG.-SERVO PERTURB'N
HEATER TIMING PERTURB'N
HEATER ENERGY PERTURB'N
IMAGE POS'N/GRID PERTURB'N
INTERPLANE PERTURB'N
48
IMAGE HARD COPY
PRT.-HEAD
11
PPS-VAR'N COMPENSN
47
44
CORREL'N
43
MEMORY
RETRIEVAL
45
41
INTENSITY INTERP.
MEDIUM THICKNESS
42
53
DET.
25
21
PRT.-MED. POS'N
22
20
SOURCE
15
PRT.-MASKING
38
COLOR CORR'N ETC.
37
IMAGE DATA
36

FIG. 9

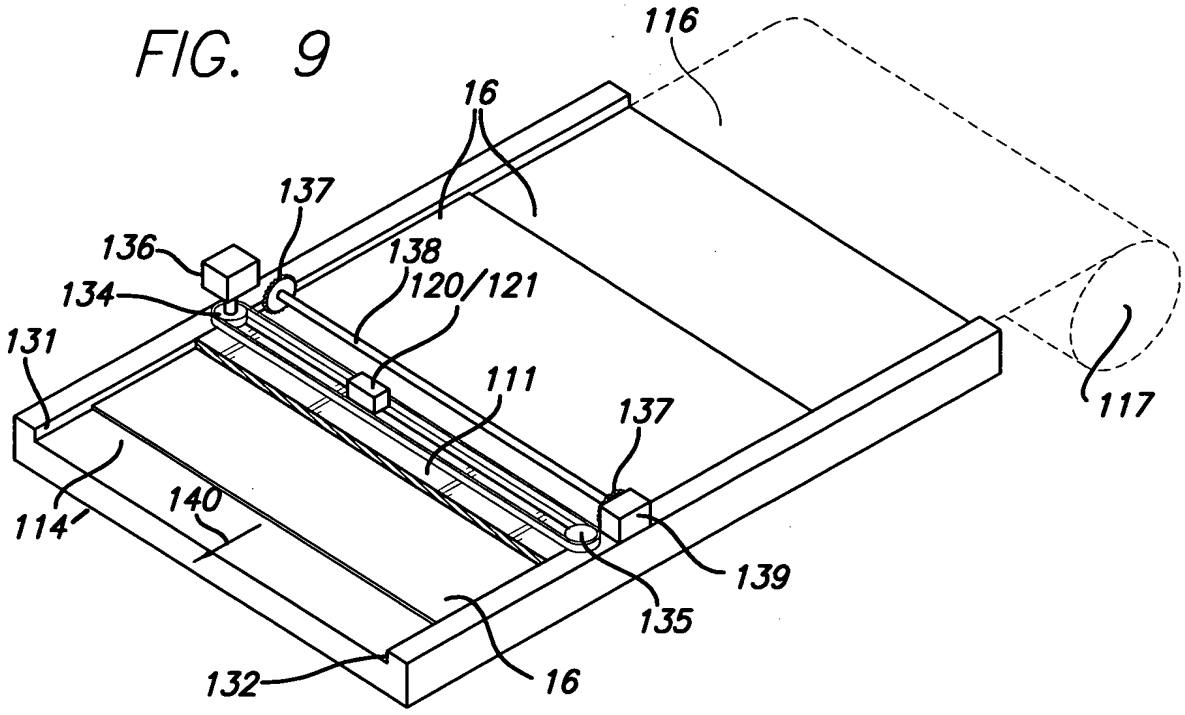
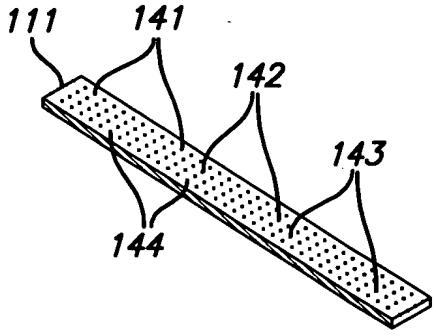

116
16
137
136
138
134
120/121
131
111
137
117
114
140
139
135
132
16

FIG. 10


111
141
142
143
144